"9") of the code book vector C(1) to C(9) that was closest to the press. Thus we obtained an input sequence of I1, I2, I3, I4.

[0033] If Ii was the same as number Ri, the press Pi coordinates (xi, yi) were saved in the set L(Ri) of accepted key presses for the key C(Ri) in question. If li was associated with a key different from number Ri, it was rejected.

[0034] After an adequate sample of key presses had been collected, e.g. hundred sequences consisting of four numbers, new code book vectors C(1) to C(9) were calculated for keys "1" to "9". The new code book vector was determined as the mean of the coordinates of the key in question in the set L(1)-L(9) of the coordinates of the presses of this key. After this, a keyboard **104** whose appearance had been re-determined to make it more ergonomic for the keyboard **104** user was shown to the user.

[0035] **FIG. 4** shows the appearance of the keyboard **104** re-determined for the left-hand thumb, and **FIG. 5** shows the appearance of the keyboard **104** re-determined for the right-hand thumb. In **FIG. 4**, the area **400** marked with dash lines describes the fact that limits (e.g. the maximum size) can be defined for the appearance of the keyboard **104** which the keyboard **104** appearance cannot exceed. The appearances of the keyboards **104** are symmetrical to each other to some extent, and thus it can be assumed that it has been determined ergonomically to support the function of the testee's thumbs. Even though the visual appearance of a virtual keyboard **104** was determined in the tests, the method and results described are also directly applicable to the re-determination of the tactile appearance of a virtual keyboard **104**.

[0036] **FIGS. 7A and 7B** illustrate what the keyboard of the subscriber terminals **100** shown in **FIGS. 1B and 1C** could look like after its tactile appearance has been made more ergonomic using the present method. The appearance of keys "*", "0" and "#" is an estimate, but that of the other keys is based on the test described above. If the electronic device **100** is used by more than one person, the device may comprise an alternative for each person. Thus the device **100** can determine, employing the method described, a separate keyboard **104** for each user that best suits his ergonomics. The present method can also be used in the product development phase, in which case the keyboard **104** appearance can be designed as ergonomic as possible for a large number of people on the basis of the tests described above.

[0037] There are numerous alternatives for the tactile appearance of a virtual keyboard **104**. In an embodiment, the processing unit **600** is configured to determine the tactile keyboard **104** appearance by giving a first tactile feedback on a key pressing. The first tactile feedback may imitate the click generated by the pressing of a normal electromechanical key, for example. In an embodiment, the processing unit **600** is configured to determine several first tactile feedbacks, a separate one either for each key or for each key group. In an embodiment, the processing unit **600** is configured to determine the tactile keyboard **104** appearance by giving a second tactile feedback on the key when it is not pressed. The second feedback may be weak vibration, for example. In an embodiment, the processing unit **600** is configured to determine the tactile keyboard **104** appearance by giving a third tactile feedback on an area which is outside the keys but belongs to the tactile keyboard **104** appearance. When the user touches the touch pad described in **FIG. 7B**, for example, but none of the keys belonging to the virtual keyboard **104**, a third feedback is given. In its simplest, the third tactile feedback can be determined to correspond to a situation where no feedback is given from the feedback unit **612**.

[0038] **FIG. 9** illustrates some principles according to which the keyboard **104** appearance can be re-determined. On the left side of **FIG. 9** there are four keys **900**, **904**, **908**, **912**. The points describe the coordinates of key presses. The dash line denotes the location and size of new keys **902**, **906**, **910**, **914**. As can be seen, the location of the keys has been changed so that the centre point of the key corresponds better to the centre point of the presses. The size of the keys has been changed considering the variance of key presses. In this example, a condition has been set on the appearance of the keys: the key has to be circular. The variance of the presses of the upper keys **900**, **904** is smaller than the variance of the presses of the lower keys **908**, **912**, and thus the size of the new upper keys **902**, **906** has been reduced from their original size, whereas the size of the new lower keys **910**, **914** has been increased from their original size. The right side of **FIG. 9** illustrates one way of implementing vector quantization where key presses denoted by dots are considered data clusters. The appearance of the original keyboard **920** consisting of four rectangles has been changed, using vector quantization, into new kind of keyboard **922** consisting of four areas which are no longer rectangles.

[0039] In the following, a method of managing the virtual keyboard of an electronic device will be described with reference to **FIG. 10**. The method starts in **1000**, e.g. when the device is switched on. Then the tactile keyboard appearance is determined in **1002**. The embodiments described above in connection with the device can be used in determining the tactile appearance. After the keyboard has been determined, the user may start using it. When the user uses the keyboard, information generated by pressing of the keyboard keys is received in **1004** and in **1006** the key that was pressed is identified on the basis of the information. Then we proceed to **1008**, where information is collected on the use of the keyboard. The information comprises at least one of the following: key press coordinates, keyboard control data, and force of the key press.

[0040] According to the method, the tactile appearance of the virtual keyboard is not necessarily re-determined constantly but e.g. at certain intervals, when the device recognizes a new user, or when the user makes a selection according to which the device re-determines the appearance. The method may comprise testing, in accordance with **1010**, whether a condition for re-determining the tactile keyboard appearance is fulfilled. If the condition is not fulfilled in **1010**, we move to **1004**, otherwise to **1012**, where the key presses are analyzed.

[0041] The analysis is used to generate at least one of the following results: coordinates of an accepted key press, coordinates of a rejected key press, coordinates of a corrected key press, time used for successive key presses, mean of the coordinates of the presses of one key, variance of the coordinates of the presses of one key, another statistical variable describing the presses of one key. A key press at the border of two keys or a key press outside the keyboard can